

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, of claims in the application:

LISTING OF CLAIMS

- 1 1. (Original) A method for marking one or more packets of data in a packet-
2 switched network based on achieved flow bandwidth information within the
3 network, comprising the computer-implemented steps of:
4 marking a first group of one or more packets of a data flow with a first behavioral
5 treatment value, wherein the first behavioral treatment value directs
6 devices within the network to treat the first group of one or more packets
7 with a first quality of service treatment;
8 determining an achieved flow bandwidth for the data flow based on data traffic
9 within the network;
10 determining a second behavioral treatment value based on the achieved flow
11 bandwidth within the network; and
12 marking a second group of one or more packets of said data flow with said second
13 behavioral treatment value, wherein the second behavioral treatment value
14 directs devices within the network to treat the second group of one or more
15 packets with a second quality of service treatment.
- 1 2. (Original) The method as recited in Claim 1, wherein:
2 the step of marking a first group of one or more packets includes the step of
3 storing a first differentiated services codepoint (DSCP) value in each
4 header of the first group of one or more packets of a data flow;

5 the step of determining a second behavioral treatment value includes the step of
6 determining a second DSCP value; and
7 the step of marking a second group of one or more packets includes the step of
8 storing the second DSCP value in each header of the second group of one
9 or more packets of a data flow.

1 3. (Original) The method as recited in Claim 1, further comprising the steps of:
2 determining packet flow characteristics of the first group of one or more packets
3 of a data flow; and
4 determining the second behavioral treatment value based on the available
5 bandwidth within the network and the packet flow characteristics of the
6 first group of one or more packets of a data flow.

1 4. (Original) The method as recited in Claim 1, further comprising the steps of:
2 establishing a Quality of Service (QoS) policy for applying a per-hop-behavior
3 treatment for forwarding packets within a flow in said network; and
4 generating the first behavioral treatment value based on the established QoS
5 policy.

1 5. (Original) A computer-readable medium carrying one or more sequences of
2 instructions for marking one or more packets of data in a packet-switched network
3 based on achieved flow bandwidth information within the network, wherein
4 execution of the one or more sequences of instructions by one or more processors
5 causes the one or more processors to perform the steps of:

6 marking a first group of one or more packets of a data flow with a first behavioral
7 treatment value, wherein the first behavioral treatment value directs
8 devices within the network to treat the first group of one or more packets
9 with a first quality of service treatment;
10 determining an achieved flow bandwidth for the data flow based on data traffic
11 within the network;
12 determining a second behavioral treatment value based on the achieved flow
13 bandwidth within the network; and
14 marking a second group of one or more packets of said data flow with said second
15 behavioral treatment value, wherein the second behavioral treatment value
16 directs devices within the network to treat the second group of one or more
17 packets with a second quality of service treatment.

1 6. (Original) The computer-readable medium as recited in Claim 5, wherein:
2 the step of marking a first group of one or more packets includes the step of
3 storing a first differentiated services codepoint (DSCP) value in each
4 header of the first group of one or more packets of a data flow;
5 the step of determining a second behavioral treatment value includes the step of
6 determining a second DSCP value; and
7 the step of marking a second group of one or more packets includes the step of
8 storing the second DSCP value in each header of the second group of one
9 or more packets of a data flow.

1 7. (Original) The computer-readable medium as recited in Claim 5, further
2 comprising instructions for performing the steps of:
3 determining packet flow characteristics of the first group of one or more packets
4 of a data flow; and
5 determining the second behavioral treatment value based on the available
6 bandwidth within the network and the packet flow characteristics of the
7 first group of one or more packets of a data flow.

1 8. (Original) The computer-readable medium as recited in Claim 5, further
2 comprising instructions for performing the steps of:
3 establishing a Quality of Service (QoS) policy for applying a per-hop-behavior
4 treatment for forwarding packets within a flow in said network; and
5 generating the first behavioral treatment value based on the established QoS
6 policy.

1 9. (Original) A computer apparatus comprising:
2 a processor; and
3 a memory coupled to the processor, the memory containing one or more
4 sequences of instructions for marking one or more packets of data in a
5 packet-switched network based on achieved flow bandwidth information
6 within the network, wherein execution of the one or more sequences of
7 instructions by the processor causes the processor to perform the steps of:
8 marking a first group of one or more packets of a data flow with a first
9 behavioral treatment value, wherein the first behavioral treatment

10 value directs devices within the network to treat the first group of
11 one or more packets with a first quality of service treatment;
12 determining an achieved flow bandwidth for the data flow based on data
13 traffic within the network;
14 determining a second behavioral treatment value based on the achieved
15 flow bandwidth within the network; and
16 marking a second group of one or more packets of said data flow with said
17 second behavioral treatment value, wherein the second behavioral
18 treatment value directs devices within the network to treat the second
19 group of one or more packets with a second quality of service
20 treatment.

1 10. (Original) The computer apparatus as recited in Claim 9, wherein:
2 the step of marking a first group of one or more packets includes the step of
3 storing a first differentiated services codepoint (DSCP) value in each
4 header of the first group of one or more packets of a data flow;
5 the step of determining a second behavioral treatment value includes the step of
6 determining a second DSCP value; and
7 the step of marking a second group of one or more packets includes the step of
8 storing the second DSCP value in each header of the second group of one
9 or more packets of a data flow.

1 11. (Original) The computer apparatus as recited in Claim 9, further comprising
2 instructions for performing the steps of:

3 determining packet flow characteristics of the first group of one or more packets
4 of a data flow; and
5 determining the second behavioral treatment value based on the available
6 bandwidth within the network and the packet flow characteristics of the
7 first group of one or more packets of a data flow.

1 12. (Original) The computer apparatus as recited in Claim 9, further comprising
2 instructions for performing the steps of:
3 establishing a Quality of Service (QoS) policy for applying a per-hop-behavior
4 treatment for forwarding packets within a flow in said network; and
5 generating the first behavioral treatment value based on the established QoS
6 policy.

1 13. (Original) A network device configured for marking one or more packets of data
2 in a packet-switched network based on achieved flow bandwidth information
3 within the network, comprising:
4 means for marking a first group of one or more packets of a data flow with a first
5 behavioral treatment value, wherein the first behavioral treatment value
6 directs devices within the network to treat the first group of one or more
7 packets with a first quality of service treatment;
8 means for determining an achieved flow bandwidth for the data flow based on
9 data traffic within the network;
10 means for determining a second behavioral treatment value based on the achieved
11 flow bandwidth within the network; and

12 means for marking a second group of one or more packets of said data flow with
13 said second behavioral treatment value, wherein the second behavioral
14 treatment value directs devices within the network to treat the second
15 group of one or more packets with a second quality of service treatment.

1 14. (Original) A method for marking one or more packets of data in a packet-
2 switched network based on achieved flow bandwidth information within the
3 network, comprising the computer-implemented steps of:
4 causing one or more network devices to mark a first group of one or more
5 packets of a data flow with a first behavioral treatment value, wherein
6 the first behavioral treatment value directs devices within the network
7 to treat the first group of one or more packets with a first quality of
8 service treatment;
9 determining an achieved flow bandwidth for the data flow based on data
10 traffic within the network;
11 determining a second behavioral treatment value based on the achieved flow
12 bandwidth within the network; and
13 causing one or more network devices to mark a second group of one or more
14 packets of said data flow with said second behavioral treatment value,
15 wherein the second behavioral treatment value directs devices within
16 the network to treat the second group of one or more packets with a
17 second quality of service treatment.

1 15. (Previously Presented) The method as in claim 1, wherein the first behavioral
2 treatment is determined without regard to the achieved flow bandwidth.

1 16. (Previously Presented) The method as in claim 1, wherein the second behavioral
2 treatment is a behavioral treatment that provides a lower level of service than
3 other available choices of behavioral treatments; and
4 wherein the second behavioral treatment provides a high enough level of service
5 to accommodate the achieved flow bandwidth.

1 17. (Previously Presented) The method as in claim 1, wherein the second behavioral
2 treatment is a behavioral treatment that provides a minimum level of service that
3 is a sufficient level of service to accommodate the achieved flow bandwidth.

1 18. (Previously Presented) The method as in claim 1, wherein the step of marking the
2 first group is performed by at least communicating the first behavioral treatment
3 to a differentiated services node located at a border of a differentiated services
4 domain; and
5 wherein the step of marking the second group is performed by at least
6 communicating the second behavioral treatment to the differentiated
7 services node.

1 19. (Previously Presented) A method as in claim 1, further comprising repeating the
2 step of determining the achieved flow bandwidth and steps that follow the step of
3 determining the achieved flow bandwidth.

1 20. (Previously Presented) A method as in claim 1, further comprising repeating the
2 step of determining the achieved flow bandwidth and steps that follow the step of
3 determining the achieved flow bandwidth multiple times, therein enhancing
4 efficiency of the network on an on going basis.

1 21. (Currently Amended) The method as in claim 1, wherein the step of determining
2 the achieved flow bandwidth is performed by at least estimating the achieved flow
3 bandwidth based on Management Information Base (MIB) variables.

1 22. (Currently Amended) The method as in claim 1, wherein the step of determining
2 the achieved flow bandwidth is performed by at least checking a Transfer Control
3 Protocol/ Internet Protocol (TCP/IP) window size and determining a value for the
4 achieved flow bandwidth based on the TCP/IP window size.

1 23. (Previously Presented) The method as in claim 1, wherein the step of determining
2 the achieved flow bandwidth is based on reception quality feedback from a Real-
3 Time Transport Protocol (RTP) receiver.

1 24. (Previously Presented) A method for marking one or more packets of data in a
2 packet-switched network based on achieved flow bandwidth information within
3 the network, comprising the computer-implemented steps of:
4 marking a first group of packets of a plurality of data flows with an initial set of
5 behavioral treatment values, wherein the first set of behavioral treatment
6 values direct devices within the network to treat the first group packets
7 with an initial set of quality of service treatments;

determining achieved flow bandwidths, wherein an achieved flow bandwidth is
determined for each of the plurality of data flows based on data traffic
within the network;
determining an updated set of behavioral treatment values based on the achieved
flow bandwidths within the network; and
after the steps of marking the first group and determining the updated set of
behavioral treatment values, marking a second group packets of said
plurality of data flows with said updated set of behavioral treatment
values, wherein the updated set of behavioral treatment values direct
devices within the network to treat the second group of packets with an
updated set of quality of service treatments.

25. (Previously Presented) A method for performing packet marking comprising the
computer-implemented steps of:
defining an initial set of Quality of Service (QoS) values for coloring packets
within a plurality of data flows, wherein each of the QoS values indicates
an allocation of bandwidth;
coloring a first group of one or more packets of a given data flow selected from
the plurality of data flows, without regard to an achieved flow bandwidth,
by at least
communicating the initial set of QoS values to each of one or more edge
differentiated services domain nodes that are located at one or
more edges of a differentiated services domain, and

12 the one or more edge differentiated services domain nodes using one or
13 more of the initial set of QoS values to color the first group;
14 estimating traffic bandwidth within the network based on bandwidth information
15 corresponding to a current traffic pattern of the network, wherein the
16 traffic bandwidth estimated includes an achieved flow bandwidth for the
17 given data flow;
18 determining an updated set of QoS values for coloring packets within the plurality
19 of data flows, based on the traffic bandwidth estimated,
20 wherein the updated set of QoS values provide lower levels of service than
21 other available choices of QoS values, and
22 wherein the updated set of QoS values provide a high enough level of
23 service to accommodate the traffic bandwidth estimated;
24 coloring a subsequent group of one or more packets of the given data flow with
25 the one or more of updated set of QoS values by at least
26 communicating the updated set of QoS values to each of one or more edge
27 differentiated services domain nodes, and
28 the one or more edge differentiated services domain nodes using one or
29 more of the updated set of QoS values to color the subsequent
30 group;
31 repeating the steps of estimating traffic bandwidth, determining an updated set of
32 QoS values, and coloring a subsequent group multiple time, therein tuning
33 the network on an ongoing basis.

1 26. (Previously Presented) The method as in claim 24, wherein the initial set of QoS
2 values is an initial set of Differentiated Services Codepoint (DSCP) values;
3 wherein the updated set of QoS values is an updated set of DSCP values;
4 wherein the step of estimating traffic bandwidth further comprises the steps of:
5 defining one or more QoS policies that specify target bandwidth values
6 and a range of possible services for each the plurality of data
7 flows, wherein a given target bandwidth value is specified for the
8 given data flow, and wherein the given target bandwidth identifies
9 a specific bandwidth that is desirous or required by the given data
10 flow;
11 gathering information about the traffic bandwidth; and
12 determining the traffic bandwidth based on the information gathered.

1 27. (New) The method of claim 1, wherein the data flow is associated with only one
2 behavioral treatment at any given time.

1 28. (New) The method of claim 24, wherein each data flow is associated with only
2 one behavioral treatment at any given time.

1 29. (New) The method of claim 1, wherein the achieved flow bandwidth is a
2 percentage of the network bandwidth

1 30. (New) The method claim 29, wherein the second behavioral treatment results in
2 the dataflow having a different achieved flow bandwidth, which is a different
3 percentage of the network bandwidth.

- 1 31. (New) The method of claim 1, wherein the determining of the second behavioral
2 treatment is in response to a determination of achieved flow bandwidth resulting
3 from the determining of the achieved flow bandwidth.
- 1 32. (New) The computer-readable medium as in claim 5, wherein the first behavioral
2 treatment is determined without regard to the achieved flow bandwidth.
- 1 33. (New) The computer-readable medium as in claim 5, wherein the second
2 behavioral treatment is a behavioral treatment that provides a lower level of
3 service than other available choices of behavioral treatments; and
4 wherein the second behavioral treatment provides a high enough level of service
5 to accommodate the achieved flow bandwidth.
- 1 34. (New) The computer-readable medium as in claim 5, wherein the second
2 behavioral treatment is a behavioral treatment that provides a minimum level of
3 service that is a sufficient level of service to accommodate the achieved flow
4 bandwidth.
- 1 35. (New) The computer-readable medium as in claim 5, wherein the step of marking
2 the first group is performed by at least communicating the first behavioral
3 treatment to a differentiated services node located at a border of a differentiated
4 services domain; and
5 wherein the step of marking the second group is performed by at least
6 communicating the second behavioral treatment to the differentiated
7 services node.

1 36. (New) A computer-readable medium as in claim 5, wherein the method further
2 comprises repeating the step of determining the achieved flow bandwidth and
3 steps that follow the step of determining the achieved flow bandwidth.

1 37. (New) A computer-readable medium as in claim 5, wherein the method further
2 comprises repeating the step of determining the achieved flow bandwidth and
3 steps that follow the step of determining the achieved flow bandwidth multiple
4 times, therein enhancing efficiency of the network on an on going basis.

1 38. (New) The computer-readable medium as in claim 5, wherein the step of
2 determining the achieved flow bandwidth is performed by at least estimating the
3 achieved flow bandwidth based on Management Information Base (MIB)
4 variables.

1 39. (New) The computer-readable medium as in claim 5, wherein the step of
2 determining the achieved flow bandwidth is performed by at least checking a
3 Transfer Control Protocol/ Internet Protocol (TCP/IP) window size and
4 determining a value for the achieved flow bandwidth based on the TCP/IP
5 window size.

1 40. (New) The computer-readable medium as in claim 5, wherein the step of
2 determining the achieved flow bandwidth is based on reception quality feedback
3 from a Real-Time Transport Protocol (RTP) receiver.

1 41. (New) A computer-readable medium carrying one or more sequences of
2 instructions for marking one or more packets of data in a packet-switched network

3 based on achieved flow bandwidth information within the network, wherein
4 execution of the one or more sequences of instructions by one or more processors
5 causes the one or more processors to perform the method comprising:
6 marking a first group of packets of a plurality of data flows with an initial set of
7 behavioral treatment values, wherein the first set of behavioral treatment
8 values direct devices within the network to treat the first group packets
9 with an initial set of quality of service treatments;
10 determining achieved flow bandwidths, wherein an achieved flow bandwidth is
11 determined for each of the plurality of data flows based on data traffic
12 within the network;
13 determining an updated set of behavioral treatment values based on the achieved
14 flow bandwidths within the network; and
15 after the steps of marking the first group and determining the updated set of
16 behavioral treatment values, marking a second group packets of said
17 plurality of data flows with said updated set of behavioral treatment
18 values, wherein the updated set of behavioral treatment values direct
19 devices within the network to treat the second group of packets with an
20 updated set of quality of service treatments.

1 42. (New) A computer-readable medium carrying one or more sequences of
2 instructions for marking one or more packets of data in a packet-switched network
3 based on achieved flow bandwidth information within the network, wherein
4 execution of the one or more sequences of instructions by one or more processors
5 causes the one or more processors to perform the method comprising:

6 defining an initial set of Quality of Service (QoS) values for coloring packets
7 within a plurality of data flows, wherein each of the QoS values indicates
8 an allocation of bandwidth;
9 coloring a first group of one or more packets of a given data flow selected from
10 the plurality of data flows, without regard to an achieved flow bandwidth,
11 by at least
12 communicating the initial set of QoS values to each of one or more edge
13 differentiated services domain nodes that are located at one or
14 more edges of a differentiated services domain, and
15 the one or more edge differentiated services domain nodes using one or
16 more of the initial set of QoS values to color the first group;
17 estimating traffic bandwidth within the network based on bandwidth information
18 corresponding to a current traffic pattern of the network, wherein the
19 traffic bandwidth estimated includes an achieved flow bandwidth for the
20 given data flow;
21 determining an updated set of QoS values for coloring packets within the plurality
22 of data flows, based on the traffic bandwidth estimated,
23 wherein the updated set of QoS values provide lower levels of service than
24 other available choices of QoS values, and
25 wherein the updated set of QoS values provide a high enough level of
26 service to accommodate the traffic bandwidth estimated;
27 coloring a subsequent group of one or more packets of the given data flow with
28 the one or more of updated set of QoS values by at least

29 communicating the updated set of QoS values to each of one or more edge
30 differentiated services domain nodes, and
31 the one or more edge differentiated services domain nodes using one or
32 more of the updated set of QoS values to color the subsequent
33 group;
34 repeating the steps of estimating traffic bandwidth, determining an updated set of
35 QoS values, and coloring a subsequent group multiple time, therein tuning
36 the network on an ongoing basis.

1 43. (New) The computer-readable medium as in claim 41, wherein the initial set of
2 QoS values is an initial set of Differentiated Services Codepoint (DSCP) values;
3 wherein the updated set of QoS values is an updated set of DSCP values;
4 wherein the step of estimating traffic bandwidth further comprises the steps of:
5 defining one or more QoS policies that specify target bandwidth values
6 and a range of possible services for each the plurality of data
7 flows, wherein a given target bandwidth value is specified for the
8 given data flow, and wherein the given target bandwidth identifies
9 a specific bandwidth that is desirous or required by the given data
10 flow;
11 gathering information about the traffic bandwidth; and
12 determining the traffic bandwidth based on the information gathered.

1 44. (New) The computer-readable medium of claim 5, wherein the data flow is
2 associated with only one behavioral treatment at any given time.

- 1 45. (New) The computer readable medium of claim 41, wherein each data flow is
2 associated with only one behavioral treatment at any given time.
- 1 46. (New) The computer-readable medium of claim 5, wherein the achieved flow
2 bandwidth is a percentage of the network bandwidth
- 1 47. (New) The computer-readable medium claim 46, wherein the second behavioral
2 treatment results in the dataflow having a different achieved flow bandwidth,
3 which is a different percentage of the network bandwidth.
- 1 48. (New) The computer-readable medium of claim 5, wherein the determining of
2 the second behavioral treatment is in response to a determination of achieved flow
3 bandwidth resulting form the determining of the achieved flow bandwidth.
- 1 49. (New) The computer apparatus as in claim 9, wherein the first behavioral
2 treatment is determined without regard to the achieved flow bandwidth.
- 1 50. (New) The computer apparatus as in claim 9, wherein the second behavioral
2 treatment is a behavioral treatment that provides a lower level of service than
3 other available choices of behavioral treatments; and
4 wherein the second behavioral treatment provides a high enough level of service
5 to accommodate the achieved flow bandwidth.
- 1 51. (New) The computer apparatus as in claim 9, wherein the second behavioral
2 treatment is a behavioral treatment that provides a minimum level of service that
3 is a sufficient level of service to accommodate the achieved flow bandwidth.

1 52. (New) The computer apparatus as in claim 9, wherein the step of marking the
2 first group is performed by at least communicating the first behavioral treatment
3 to a differentiated services node located at a border of a differentiated services
4 domain; and
5 wherein the step of marking the second group is performed by at least
6 communicating the second behavioral treatment to the differentiated
7 services node.

1 53. (New) A computer apparatus as in claim 9, wherein the method further comprises
2 repeating the step of determining the achieved flow bandwidth and steps that
3 follow the step of determining the achieved flow bandwidth.

1 54. (New) A computer apparatus as in claim 9, wherein the method further comprises
2 repeating the step of determining the achieved flow bandwidth and steps that
3 follow the step of determining the achieved flow bandwidth multiple times,
4 therein enhancing efficiency of the network on an on going basis.

1 55. (New) The computer apparatus as in claim 9, wherein the step of determining the
2 achieved flow bandwidth is performed by at least estimating the achieved flow
3 bandwidth based on Management Information Base (MIB) variables.

1 56. (New) The computer apparatus as in claim 9, wherein the step of determining the
2 achieved flow bandwidth is performed by at least checking a Transfer Control
3 Protocol/ Internet Protocol (TCP/IP) window size and determining a value for the
4 achieved flow bandwidth based on the TCP/IP window size.

1 57. (New) The computer apparatus as in claim 9, wherein the step of determining the
2 achieved flow bandwidth is based on reception quality feedback from a Real-
3 Time Transport Protocol (RTP) receiver.

1 58. (New) A computer apparatus comprising:
2 a processor; and
3 a memory coupled to the processor, the memory containing one or more
4 sequences of instructions for marking one or more packets of data in a
5 packet-switched network based on achieved flow bandwidth information
6 within the network, wherein execution of the one or more sequences of
7 instructions by the processor causes the processor to perform the method
8 including at least:
9 marking a first group of packets of a plurality of data flows with an initial set of
10 behavioral treatment values, wherein the first set of behavioral treatment
11 values direct devices within the network to treat the first group packets
12 with an initial set of quality of service treatments;
13 determining achieved flow bandwidths, wherein an achieved flow bandwidth is
14 determined for each of the plurality of data flows based on data traffic
15 within the network;
16 determining an updated set of behavioral treatment values based on the achieved
17 flow bandwidths within the network; and
18 after the steps of marking the first group and determining the updated set of
19 behavioral treatment values, marking a second group packets of said

plurality of data flows with said updated set of behavioral treatment values, wherein the updated set of behavioral treatment values direct devices within the network to treat the second group of packets with an updated set of quality of service treatments.

59. (New) A computer apparatus comprising:

a processor; and

a memory coupled to the processor, the memory containing one or more

sequences of instructions for marking one or more packets of data in a packet-switched network based on achieved flow bandwidth information within the network, wherein execution of the one or more sequences of instructions by the processor causes the processor to perform the method including at least:

defining an initial set of Quality of Service (QoS) values for coloring packets within a plurality of data flows, wherein each of the QoS values indicates an allocation of bandwidth;

coloring a first group of one or more packets of a given data flow selected from the plurality of data flows, without regard to an achieved flow bandwidth, by at least

communicating the initial set of QoS values to each of one or more edge differentiated services domain nodes that are located at one or more edges of a differentiated services domain, and

the one or more edge differentiated services domain nodes using one or more of the initial set of QoS values to color the first group;

20 estimating traffic bandwidth within the network based on bandwidth information
21 corresponding to a current traffic pattern of the network, wherein the
22 traffic bandwidth estimated includes an achieved flow bandwidth for the
23 given data flow;
24 determining an updated set of QoS values for coloring packets within the plurality
25 of data flows, based on the traffic bandwidth estimated,
26 wherein the updated set of QoS values provide lower levels of service than other
27 available choices of QoS values, and
28 wherein the updated set of QoS values provide a high enough level of service to
29 accommodate the traffic bandwidth estimated;
30 coloring a subsequent group of one or more packets of the given data flow with
31 the one or more of updated set of QoS values by at least
32 communicating the updated set of QoS values to each of one or more edge
33 differentiated services domain nodes, and
34 the one or more edge differentiated services domain nodes using one or more of
35 the updated set of QoS values to color the subsequent group;
36 repeating the steps of estimating traffic bandwidth, determining an updated set of
37 QoS values, and coloring a subsequent group multiple time, therein tuning
38 the network on an ongoing basis.

- 1 60. (New) The computer apparatus as in claim 58, wherein the initial set of QoS
2 values is an initial set of Differentiated Services Codepoint (DSCP) values;
3 wherein the updated set of QoS values is an updated set of DSCP values;
4 wherein the step of estimating traffic bandwidth further comprises the steps of:

5 defining one or more QoS policies that specify target bandwidth values
6 and a range of possible services for each the plurality of data
7 flows, wherein a given target bandwidth value is specified for the
8 given data flow, and wherein the given target bandwidth identifies
9 a specific bandwidth that is desirous or required by the given data
10 flow;
11 gathering information about the traffic bandwidth; and
12 determining the traffic bandwidth based on the information gathered.

1 61. (New) The computer apparatus of claim 9, wherein the data flow is associated
2 with only one behavioral treatment at any given time.

1 62. (New) The computer apparatus of claim 58, wherein each data flow is associated
2 with only one behavioral treatment at any given time.

1 63. (New) The computer apparatus of claim 9, wherein the achieved flow bandwidth
2 is a percentage of the network bandwidth

1 64. (New) The computer apparatus claim 63, wherein the second behavioral
2 treatment results in the dataflow having a different achieved flow bandwidth,
3 which is a different percentage of the network bandwidth.

1 65. (New) The computer apparatus of claim 9, wherein the determining of the second
2 behavioral treatment is in response to a determination of achieved flow bandwidth
3 resulting form the determining of the achieved flow bandwidth.